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Lightning was visible during the night: the north wind blew with considerable force at intervals, and a dull uniform noise was heard in the atmosphere, similar to what is produced at a great distance from the sea by a tempest. The sky seemed to threaten snow, and some persons thought it was variegated with reddish-yellow clouds. It resulted from various observations: 1. That this snow or hail derived its colour from a very fine earthy substance, interposed with uniformity between the small crystals of the hail, without however being inclosed in their nucleus. 2. That this substance is composed almost entirely of alumine, very little carbonated lime, and a still less quantity of iron, manganese, and silex; finally, of a very feeble animal or vegetable principle, capable of being carbonized by the action of sulphuric acid and of putrefying water."

Late Improvements in Printing.

Since Tuesday, 29th November, the Times newspaper has been printed by machinery; that is to say, the forms (or pages) being composed and made up in the usual manner, have been worked off by means of machinery, moved by a steam engine, instead of being printed at the common press as heretofore usual. It is but justice to say that the paper, since this change in the mode of working, has not only been well printed, but much better than can, in the hurry of a daily paper, be effected in the common method; and if we add to this the fact stated by the proprietor, Mr. Walter, that, by means to this machinery, a much greater number can be worked off in a given time (the number that can be worked in one hour is stated at 1100), the invention may be hailed as an improvement in the art of printing of the highest consequence to mankind.

The inventor is a Mr. Kœnig, and the artizan by whom it has been constructed and brought into action, is a Mr. Baner. If the complexity and accuracy necessary in such a piece of machinery be considered, it will not be denied, that no small share of praise is due to both of these ingenious individuals. But when we consider the machinations and prejudices which Mr. Walter must have encountered, and with which he must yet lay his account to contend, in bringing this machinery into actual use, we know not to which to ascribe the greatest share of merit. May his firmness and perseverance meet its due reward!

It is somewhat remarkable, that while this invention, which has taken a long time to perfect, has been in progress, another, for the same object, was also carrying on by Mr. Bacon of Norwich, and Mr. Donkin, engineer, of Bermondsey, which was set at work within a day after the former commenced. The Norwich Mercury, received this morning, a paper published by Mr. Bacon, contains a prospectus of the latter machine, to which is added the following notice.

" Since this prospectus was printed, the machine has been set to work on a French Testament in this city, for the British and Foreign Bible Society. It is worked by one man and two boys; and we may venture to affirm, that in the ordinary manner in which the London newspapers are printed, many more copies than the number stated by the Times could be taken off with the greatest ease. Dr. Milner, the Master of Queen's College, Mr. Wood, President of St. John's, and Mr. Knave, since Master of Christ's, as a deputation from the Syndics of the Press at Cambridge, have also inspected the machine, and having manifested by their readiness to contract with the patentees for its introduction at the University, all the zeal which might be expected in that body for the cause of literature and of the arts. These are the earliest patrons of the art.

" The reader will learn little of the comparative excellence of the two processes from these descriptions. It will be for time to decide upon their respective merits; but there can be no doubt that a change in the art of printing, very important to society, will be effected by the joint or separate influence of these machines.

(Signed) " R. M. BACON.

" *Norwick Mercury Office, Nov*, 30, 1814."

We cannot, in few words, convey to our readers a full description of either of these machines, and must, therefore, content ourselves with briefly stating the prominent points in which these machines differ from each other. In Mr. Walter's, the forms are laid upon a travelling carriage, as in the common press, but having a range of such length that the form, by passing under a system of rollers, receives a charge of ink, and still going on, receives from another roller the sheet pressed down upon it, by passing under the roller; when through, the sheet is taken off the form, receives another charge of ink from rollers and, on its return, presents another sheet, which has in the interim been placed on the paper roller, and so alternately, in going and also in returning, a sheet is printed.

In Messrs Bacons and Donkin's machine, there is no reciprocating motion. The types are placed on a prism of as many sides as the nature of the form requires; this prism occupies the centre of an upright frame, like the roller in a copperplate press; below this is a kind of compound faced roller, suited to the form of the prism; through between these, the sheets to be printed (attached to the face of a piece of cloth) are passed in succession; and in the mean time, the revolution of the type prism brings its different portions, in succession, under a system of inking-rollers placed over it, by which it receives successive charges of ink, to be delivered to the sheets as they pass in succession between the lower rollers.

The comparative merits of the two machines will be decided by experience. They both seem highly ingenious, and either of them might have been hailed as promising all that was wanted to perfect the art of printing. They very circumstance of two machines starting at one, and both calculated to effect the object intended, will eventually tend to the greater perfection of both, and their more speedy general adoption.—*(London Paper.)*

Our journal of this day (29th November) presents to the public the practical result of the greatest improvement connected with printing, since the discovery of the art itself. The reader of this paragraph now holds in his hand, one of the many thousand impressions of *The Times* newspaper, which were taken off last night by a mechanical apparatus. A system of machinery, almost organic, has been devised and arranged, which, while it relieves the human frame of its most laborious efforts in printing, far exceeds all human power in rapidity and despatch. That the magnitude of the invention may be justly appreciated by its effects, we shall inform the public, that after the letters are placed by the compositors, and inclosed in what is called the form, little more remains for man to do, than to attend upon, and watch this unconscious agent in its operations. The machine is then merely supplied with paper; itself places the form, inks it, adjusts the paper to the form newly inked, stamps the sheet, and gives it forth to the hands of the attendant, at the same time withdrawing the form for a fresh coat of ink, which itself again distributes, to meet the ensuing sheet now advancing for impression; and the whole of these complicated acts is performed with such a velocity, and simultaneousness of movement, that not less than eleven hundred sheets are impressed in one hour.

That the completion of an invention of this kind, not the effect of chance, but the result of mechanical combinations methodically arranged in the mind of the artist, should be attended with many obstructions and much delay, may be readily admitted. Our share in this event has, indeed, only been the application of the discovery, under an agreement with the patentees, to our own particular business; yet few can conceive, even with this limited interest, the various disappointments and deep anxiety to which we have, for a long course of time, been subjected.

Of the person who made this discovery, we have but little to add. Sir Christopher Wren's noblest monument is to be found in the building which he erected; so is the tribute of praise, which we are capable of offering to the inventor of the printing machine, comprised in the preceding description, which we have feebly sketched, of the powers and utility of his invention. It must suffice to say further, that he is a Saxon by birth: his name is Kœnig; and that the invention has been executed under the direction of his friend and countryman, Bauer.—[*Times, Nov.* 29.

We are at length able to meet the complaints of our customers with a confidence in our capacity to remove the cause of them—to meet their increasing demands with an assurance that we shall be able to fulfil them. The machine of which we announced the discovery and our adoption a few days ago, has been whirling on its course ever since, with improving order, regularity, and even speed. The length of the debates on Thursday, the day when Parliament was adjourned, will have been observed; on such an occasion the operation of composing and printing the last page must commence among all the Journals at the same moment; and starting from that moment, we, with our infinitely superior circulation, were enabled to throw off our whole impression many hours before the other respectable rival Prints. The accuracy and clearness of the impression will likewise excite attention. Till Parliament, therefore, shall be again assembled, there will exist no reason why the public, in any part of the metropolis, should wait for The Times Journal longer than eight o'clock.

We should make no reflections upon those by whom this wonderful discovery has been opposed—the doubters and unbelievers—however uncharitable they may have been to us, were it not that the efforts of genius are always impeded by drivellers of this description; and that we owe it to such men as Mr. Kœnig and his friend, and all future promulgators of beneficial inventions, to warn them that they will have to contend with every thing that selfishness and conceited ignorance can devise or say; and if we cannot clear the way before them, we would at least give them notice to prepare a panoply against its dirt and filth.

There is another class of men from whom we receive dark and anonymous threats of vengeance, if we persevere in the use of this machine—these are the pressmen. They well know or at least should well know, that such menace is thrown away upon us. There is nothing that we will not do to assist and serve those whom we have discharged. They themselves see the greater rapidity and precision with which the paper is printed. What right have they to make us print it slower and worse for their supposed benefit? A little reflection, indeed, would shew them, that it is neither in their power nor in ours to stop a discovery now made, if it is beneficial to mankind; or to force it down, if it is useless. They had better, therefore, acquiesce in a result which they cannot alter; more especially as there will be still employment enough for the old race of pressmen, before the new method obtains general use, and no new ones need be brought up to the business; but we caution them seriously against involving themselves and their families in ruin, by becoming amenable to the laws of their country. It has always been matter of great satisfaction to us to reflect, that we encountered and crushed one conspiracy: we should be sorry to find our work half done.

It is proper to undeceive the world in one particular, that is, as to the number of hands discharged. We, in fact, employ only eight fewer workmen than formerly; whereas more than three times that number have been engaged for a year and a half in building the machine.

[*Times, Dec.* 3.

To the Public.

I have been called upon by my friends to give some account of the origin and progress of the invention which has been made use of during the last week for printing The Times and Evening Mail newspapers. I should not have presumed to relate the details of an enterprise which has in it nothing so extraordinary as to excite public attention, and which scarcely would have been noticed, had it not been connected with the art of printing; but a confused statement having appeared in several newspapers, and insinuations thrown out that the editor of The Times had not bestowed the merit of the invention on the rightful owner, it will, perhaps, not be thought assuming to publish the following facts.

The first idea relating to this invention occurred to me eleven years ago, and the first experiments were made soon after in Saxony. My original plan was confined to an improved press, in which the operation of laying the ink on the types was performed by an apparatus connected with the motion of the coffin, in such a manner, that one hand could be saved. As nothing could be gained in expedition by this plan, the idea soon suggested itself to move this press by machinery, or to reduce the several operations to one rotatory motion, to which any first mover might be applied. Its execution was not quite completed when I found myself under the necessity of seeking assistance for the further prosecution of it.

There is on the continent no encouragement for an enterprise of this description. The system of patents, as it exists in England, being either unknown or not adopted in the continental states, there is no inducement for individual enterprise, and projectors are commonly obliged to offer their discoveries to some government, and to solicit encouragement. I need hardly add, that scarcely ever is an invention brought to maturity under such circumstances. The well-known fact, that almost every invention seeks, as it were, refuge in England, and is there brought to perfection, where the government does not afford any other protection to inventors than what is derived from the wisdom of the laws, seems to indicate that the continent has yet to learn from her the best manner of encouraging the mechanical arts. I had my full share in the ordinary disappointments of continental projectors; and after having lost in Germany and Russia upwards of two years in fruitless applications, I arrived about eight years ago in England, where I was introduced to, and soon joined by Mr. Thos. Bensley, a printer so well known to the literary world, that the mention of his name is sufficient.

In this country of spirited enterprise and speculation, it is difficult to have a plan entirely new. Soon after my arrival, I learnt that many attempts of a similar descriprion have been made before mine, and that they had all failed. Patents had been taken, and thousands of pounds sunk without obtaining the desired result. I and Mr. Bensley, however, were not discouraged by the failure of our predecessors; the execution of the plan was begun, and as the experiments became very expensive, two other gentlemen, Mr. George Woodfall, and Mr. Richard Taylor, eminent printers in London, joined us.

After many obstructions and delays, the first principal machine was completed exactly upon the plan which I have described in the specification of my first patent, which is dated March 29, 1810 It was set to work in April, 1811. The sheet (H) of the New Annual Register, for 1810, "Principal Occurrences," 3000 copies, was printed with it, and is, I have no doubt, the first part of a book ever printed with a machine.

The actual use of it, however, soon suggested new ideas, and led to the rendering it less complicated and more powerful. Impressions produced by means of cylinders, which had likewise been already attempted by others without the desired effect, were again tried by me upon a new plan, namely, to place the sheet round the cylinder, thereby making it, as it were, part of its periphery. After some very promising experiments, the plan for a new machine on this principle was made, and a manufactory established for the purpose. Since this time I have had the benefit of my friend Mr. Bauer's assistance, who, by the judgment and precision with which he executed my plans, has greatly contributed to their success. The new machine was completed in December, 1812, after great difficulties attending the cylindrical impression. Sheets G and X of Clarkson's life of Penn, vol. I, are the first printed with an entirely cylindrical press; the papers of the Protestant union were also printed with it, in February and March, 1813. Sheet M of Aiton's Hortus Kewensis, vol. V., will shew the progress of improvement in the use of this machine. All together there are about 160,000 sheets now in the hands of the public, printed with this machine, which, with the aid of two hands, takes off 800 in the hour. It is accurately described in the specifications of my two patents, dated Oct. 30, 1812, and July 23, 1813.

The machines now printing *the Times* and *Mail* are upon the same principle as that just mentioned; but they have been contrived for the particular purpose of a newspaper of extensive circulation, where *expedition* is the great object.

The public are undoubtedly aware, that never, perhaps, was a new invention put to so severe a trial as the present one, by being used on its first public introduction for the printing of newspapers, and will, I trust, be indulgent with respect to many defects in the performance, none of them being inherent in the principle of the machine; and we hope, that in less than two months, the whole will be corrected by greater adroitness in the management of it, so far at least as the hurry of newspaper printing will at all admit.

It will appear from the foregoing narrative, that it was incorrectly stated in several newspapers, that I sold my interest to two foreigners, my partners in this enterprise being at present two Englishmen, Mr. Bensley, and Mr. Taylor; and it is gratifying to my feelings to avail myself of this opportunity to thank those gentlemen publicly for the confidence they have reposed in me, for the aid of their practical skill, and for the persevering support which they have afforded me in long and very expensive experiments; thus risking their fortunes in the prosecution of my invention.

The first introduction of the invention was considered by some as a difficult and even hazardous step. The proprietor of *the Times* having made that his task, the public are aware that it is in good hands.

FR. KOENIG.